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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,583	10/02/2003	Richard E. Kessler	200301779-2	8193

7590 03/18/2009

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EXAMINER	
HASSAN, AURANGZEB	

ART UNIT	PAPER NUMBER
2182	

MAIL DATE	DELIVERY MODE
03/18/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.**	**Applicant(s)**	
	10/677,583	KESSLER ET AL.	
	Examiner	**Art Unit**	
	AURANGZEB HASSAN	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2008*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3 and 4* is/are pending in the application.
  4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *3 and 4* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a)☐ All b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
  Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Appeal Brief

1. In view of the Appeal Brief filed on **12/09/2008**, PROSECUTION IS HEREBY REOPENED. The Office Action with the new ground(s) of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma et el. (US Patent Number 6,647,469 hereinafter “Sharma”) in view of Bertone et al. (US Patent Number 5,522,069).

4. As per claim 3, Sharma teaches a distributed multiprocessing computer system (figure 1), comprising: a plurality of processors (element 125, figure 1) each coupled to an I/O bridge; a plurality of memory modules coupled one each to the plurality of processors (DIMMS, element 135, figure 1), each memory module able to store data blocks that are shared between said processors, wherein coherence of the shared data blocks is maintained using a directory based coherence protocol (memory configured to support a directory based coherency scheme, column 7, lines 1 – 3); at least on I/O device coupled to the I/O bridge, the I/O device and I/O bridge adapted to perform a direct memory access (DMA) to transfer data blocks to the memory modules (I/O device, column 6, lines 45 – 58); and wherein the I/O bridge obtains exclusive ownership of shared memory module data blocks during I/O device access (column 6, lines 59 – 65) and wherein said I/O bridge includes a DMA device configured to perform both DMA reads and writes on streams of data blocks (column 7, lines 65 – 67, column 8, lines 1 – 9).

However, Sharma does not explicitly disclose the out-of-order structure.

Bertone teaches access in which data is configured to both in-order and out-of-order data handling on streams (column 17, lines 13 – 23).

It would have been obvious of one of ordinary skill in the art to recognize that Sharma teaches has the DMA structure to support an in-order and out-of-order read/write and modify it with the implementation as seen in Bertone above. One of ordinary skill would be motivated to make such modification in order to improve system bus operation for transfer to and from memory (column 1, lines 49 – 55).

Furthermore the Examiner notes other rationale that Sharma teaches a distributed multiprocessing computer system including DMA data transfer (figure 1) and Bertone teaches a system in which data transfer is enhanced by in-order and out-of-order operations (column 17) to enhance transfers to and from memory.

All of the component parts of Sharma and Bertone were known at the time of the applicant's claimed invention the only difference is the combination of the known elements in a single data transfer system thus it would have been obvious to one of ordinary skill in the art to combine all the elements in a single system to yield a predictable result of enhanced data transfers.

5. As per claim 4, Sharma teaches a distributed multiprocessing computer system wherein the DMA device that performs an in-order stream of reads of data blocks always receives coherent data blocks that do not have to be written back to the memory module (figure 5, column 9, lines 30 – 67).

Response to Arguments

6. Applicant's arguments with respect to claims 3 and 4 have been considered but are moot in view of the new ground(s) of rejection.

7. The Examiner also notes that the newly cited rejection includes appropriate handling of both in-order and out-of-order data processing.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AURANGZEB HASSAN whose telephone number is (571)272-8625. The examiner can normally be reached on Monday - Friday 9 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571)272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH

/Ilwoo Park/
Primary Examiner, Art Unit 2182
3/16/2009